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ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2
19304A MLRS, MISSILE NUMBER 8K002, BN007, BN008 ROUND NUMBER V---ETC(U)

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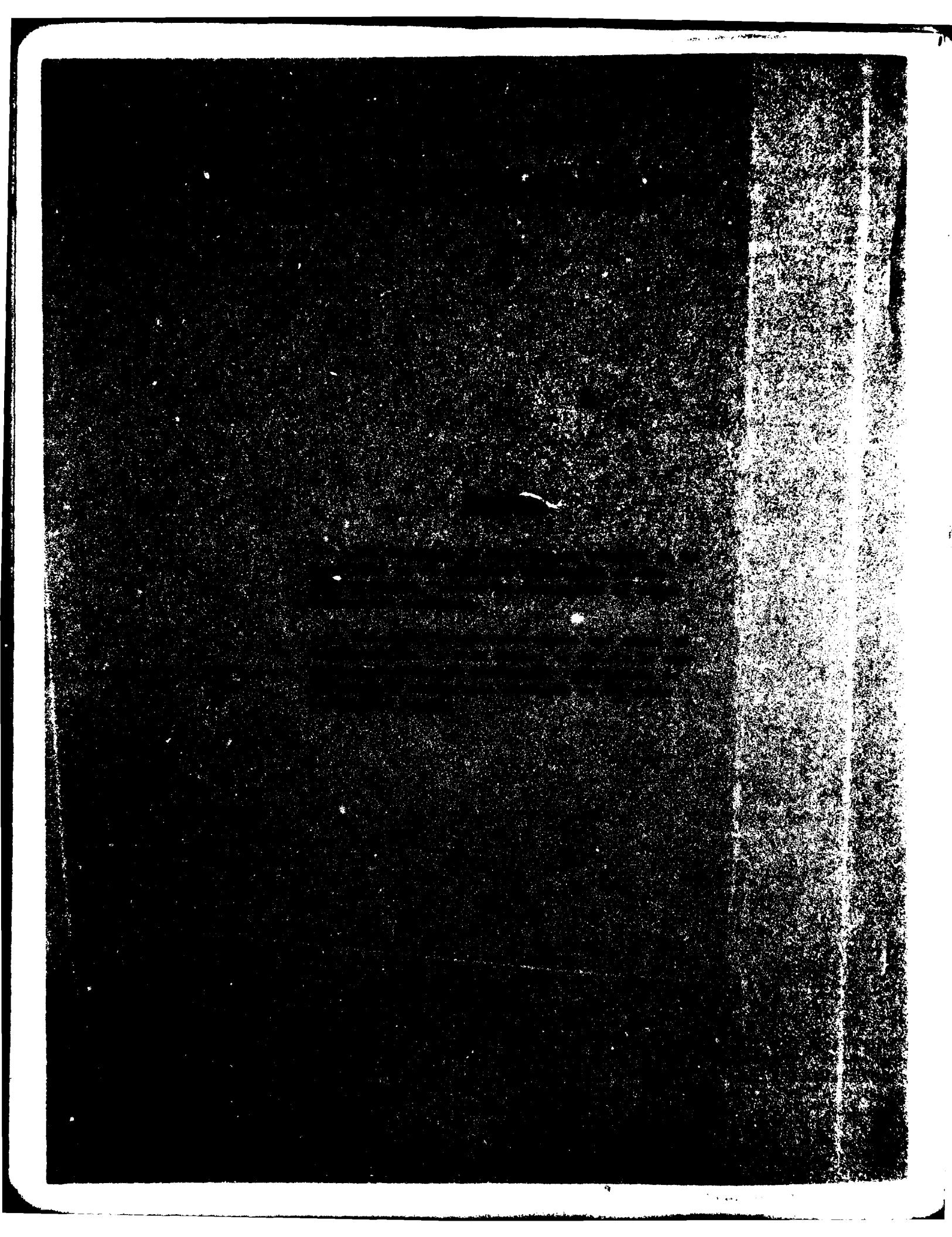
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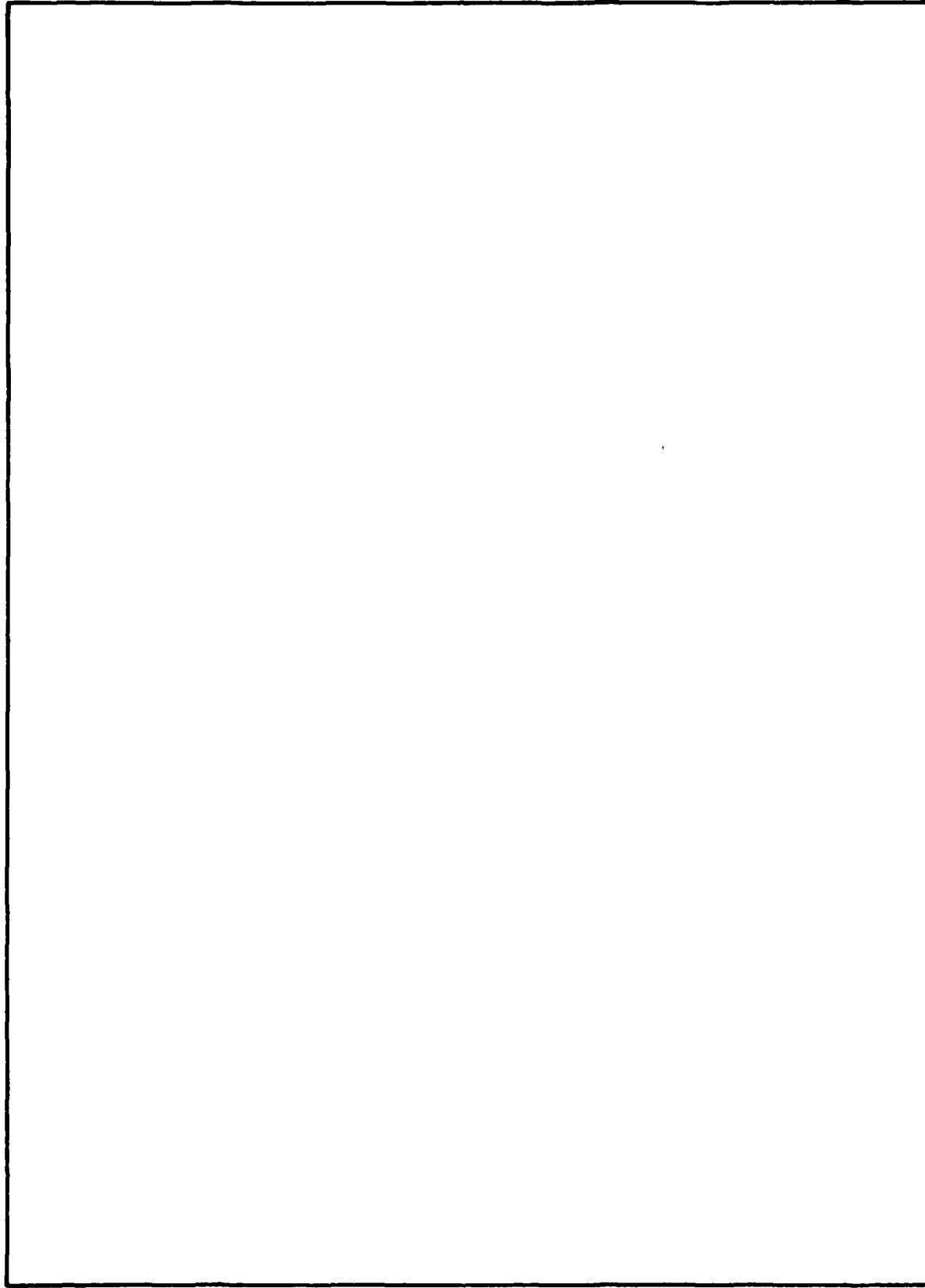
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INTRODUCTION

19304A MLRS, Missile Numbers BK002, BN007, and BN008, Round Numbers V-146/MD-13, V-147/MD-14, and V-148/MD-15, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1511:00, 1511:05, and 1511:10 MDT, 26 May 1981. The scheduled launch times were 1400:00, 1400:04.5, and 1400:09 MDT.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from RAPTS T-9 pibal observations at:

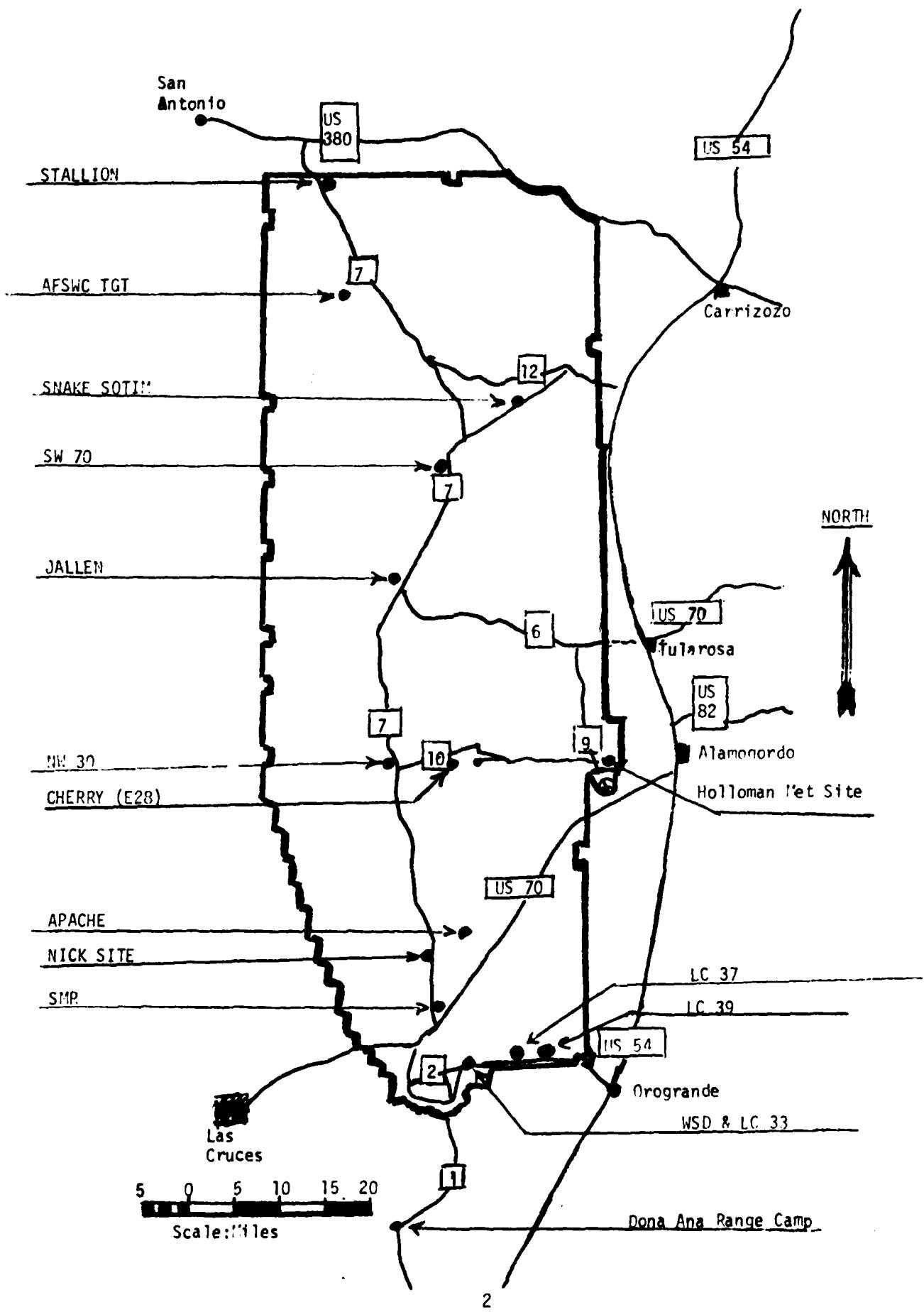
SITE AND ALTITUDE

LC-33 2 KM
SMR 2 KM

(2) Air structure data (rawinsonde) were collected at the following Met Sites:

SITE AND TIME

LC-37	1100	MDT
WSD	1200	MDT
LC-37	1300	MDT
WSD	1511	MDT



PROJECT SURFACE OBSERVATION

TABLE 1

DATE <u>26</u> <u>MAY</u> <u>1981</u>		STATION <u>LC-33</u>	
TIME <u>1511</u>	PRESSURE <u>875.2</u> mbs	TEMPERATURE <u>32.5</u> °C	DEW POINT <u>4.8</u> °C
		RELATIVE HUMIDITY <u>18</u> %	DENSITY <u>991</u> gm/m ³

OBSTRUCTIONS TO VISIBILITY	CLOUDS			REMARKS
	1st LAYER AMT TYPE	2nd LAYER AMT TYPE	3rd LAYER AMT TYPE	
3	4 AC	16,500 2 CI	25,000	

PSYCHROMETRIC COMPUTATION

TIME: MDT	1511		
DRY BULB TEMP.	32.5		
WET BULB TEMP.	15.9		
WET BULB DEPR.	16.6		
DEW POINT	4.8		
RELATIVE HUMID.	18		

TABLE 2 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1			POLE #2			POLE #3		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	288	13	T-30	295	10	T-30	292	14
T-20	278	12	T-20	285	10	T-20	287	11
T-10	273	10	T-10	282	09	T-10	283	12
T0.0	267	10	T0.0	282	07	T0.0	289	11
T+10	268	10	T+10	266	08	T+10	273	10

TABLE 3 LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 62 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	295	10	T-30	294	10
T-20	288	09	T-20	289	08
T-10	291	06	T-10	285	09
T0.0	318	07	T0.0	278	08
T+10	297	06	T+10	290	08

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	284	10	T-30	288	10
T-20	285	09	T-20	284	11
T-10	280	09	T-10	282	10
T0.0	287	09	T0.0	280	10
T+10	287	10	T+10	288	09

TABLE 4T-TIME PILOT-BALLOON MEASURED WIND DATA
DATE 26 May 1981

SITE: LC-33
 TIME: 1511 MDT
 WSTM COORDINATES:
 X= 485,135.76
 Y= 185,919.24
 H= 3988.57

SITE: SMR
 TIME: 1511 MDT
 WSTM COORDINATES:
 X= 472,444.85
 Y= 213,781.96
 H= 4000.99

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS	LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	320	08	SURFACE		
150	298	10	150		
210	289	08	210		DATA INVALID
270	298	06	270		
330	264	04	330		DUE TO TRACKING
390	271	07	390		
500	263	05	500		ERROR
650	260	06	650		
800	264	06	800		
950	264	07	950		
1150	251	09	1150		
1350	253	06	1350		
1550	255	09	1550		
1750	242	09	1750		
2000	239	11	2000		

Data obtained from RAPTS T-9 Tracking Pilot-Balloon Observation.

TABLE 5AIMING AND T-TIME COMPUTER MET MESSAGES
26 May 1981

LC-37	1100 MDT	WSD	1200 MDT
METCM1324063		METCM1324064	
261700124876		261800122877	
00151003	30360876	00142005	30370877
01078005	30110866	01285010	30230868
02021006	29770841	02165003	29910843
03040006	29380803	03157005	29530805
04627006	28890758	04184002	29040760
05506009	28450714	05063004	28540716
06473012	27980672	06580006	28080674

LC-37	1300 MDT	WSD	1511 MDT
METCM1324063		METCM1324064	
261900124875		262120122875	
00213002	30430875	00533010	30660875
01164004	30190865	01487017	30520865
02000000	29870840	02508013	30200841
03407004	29480803	03480013	29760804
04428010	28960757	04467014	29220759
05452013	28490714	05458014	28710715
06380010	28010672	06458013	28230674

STATION ALTITUDE 4051.37 FEET MSL
26 MAY 1100 HRS MDT
ASCENSION NO. 104

SIGNIFICANT LEVEL DATA

1460150104

LC-37

TABLE 6

GEODETIC COORDINATES
32°40'17.5" LAT DEG
106.31232" LONG DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE OF WIND DEGREES CENTIGRADE	REL. HUM. PERCENT
375.5	4051.4	29.5	•2
660.2	4294.8	26.8	4.0
850.0	4005.8	24.5	3.2
760.4	7729.1	16.5	•7
745.9	8592.5	14.1	-1.9
700.0	10338.8	9.6	-4.4
664.8	11735.9	5.5	-6.1
619.6	13606.6	-1.0	-7.6
608.2	14094.0	-1.3	-6.6
593.0	14757.7	-1.4	-9.5
557.8	16354.8	-3.5	-23.7
549.2	16758.9	-3.1	-16.6
532.2	17577.0	-3.4	-17.3
500.0	19188.2	-7.4	-19.5
474.6	20514.5	-11.2	-21.3
458.6	21379.4	-12.0	-24.0
428.2	23094.4	-15.6	-26.6
413.2	23976.3	-17.8	-23.3
400.0	24773.3	-19.5	-24.4
395.1	25074.1	-20.6	-25.1
387.8	25528.2	-20.8	-27.4
365.7	26946.6	-24.2	-29.7
354.4	27698.1	-25.6	-32.5
337.9	28830.2	-28.3	-35.8
306.8	31085.2	-33.7	-40.5
300.0	31601.5	-34.9	-42.0

STATION ALTITUDE 4051.37 FEET, S.
26 MAY 01 1960 104
ASCLATION NO. 104

UPPER AIR DATA
1460100104
LC-37

EQUATORIAL COORDINATES
32.40175 LAT UEG
106.31232 LONG E

TABLE 7

GEOMETRIC PRESSURE ALITUDE MSL FEET	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT	REFL.HUM. GR/CUBIC METER	REFL.HUM. SOUND KNOTS	REFL.HUM. WIND DATA DIRECTION LENGHTS (IN)	REFL.HUM. SPEED KNOTS	REFL.HUM. REFRACTION
4051.4	872.5	29.5	2	15.0	100.1	678.0	2.9
4500.0	362.0	26.0	3.7	23.7	100.3	675.0	3.1
5000.0	847.2	24.2	5.1	25.2	99.0	673.0	4.0
5500.0	832.4	22.8	2.5	26.3	97.5	671.5	5.2
6000.0	817.8	21.4	1.6	27.3	964.1	669.7	6.6
6500.0	803.5	20.0	1.1	28.4	951.9	669.0	6.5
7000.0	789.5	18.6	.4	29.5	939.9	669.4	6.4
7500.0	775.6	17.1	-.3	30.5	92.1	664.7	5.9
8000.0	761.9	15.7	-1.0	31.6	916.2	665.1	5.2
8500.0	746.4	14.4	-1.8	32.8	904.3	661.5	5.1
9000.0	734.7	13.0	-2.5	33.9	892.2	659.9	5.8
9500.0	721.7	11.6	-3.1	35.1	880.2	658.4	7.5
10000.0	708.7	10.5	-3.9	36.0	863.5	656.9	9.5
10500.0	695.9	9.1	-4.5	37.2	850.7	655.5	11.2
11000.0	683.1	7.7	-5.1	39.4	845.5	653.0	12.2
11500.0	670.6	6.2	-5.7	42.0	834.4	651.9	12.9
12000.0	658.2	4.6	-6.2	45.4	823.8	650.0	14.2
12500.0	646.0	2.8	-6.5	49.9	813.5	647.9	15.6
13000.0	633.9	1.1	-7.0	54.5	803.5	645.5	18.0
13500.0	622.1	-.6	-7.6	59.0	793.6	643.6	20.6
14000.0	610.4	-.6	-7.8	65.6	780.2	643.1	21.9
14500.0	598.9	-1.4	-8.3	59.0	760.0	642.9	23.1
15000.0	587.5	-1.7	-11.1	48.7	752.8	642.4	24.0
15500.0	576.4	-2.4	-14.8	37.7	740.6	641.5	24.7
16000.0	565.4	-3.0	-19.4	26.8	726.6	640.0	24.7
16500.0	554.7	-3.4	-21.7	22.6	715.7	640.1	25.0
17000.0	544.1	-3.2	-19.2	30.2	701.5	640.4	26.0
17500.0	533.8	-3.4	-17.4	32.6	688.5	640.2	26.7
18000.0	523.6	-4.5	-17.9	34.1	676.0	640.5	27.5
18500.0	513.5	-5.7	-18.6	35.3	666.4	657.5	28.2
19000.0	503.7	-6.9	-19.3	36.5	656.4	656.0	29.0
19500.0	493.9	-6.3	-19.9	38.4	649.0	654.5	30.1
20000.0	484.5	-9.7	-20.6	40.7	639.9	652.0	30.4
20500.0	474.9	-11.2	-21.2	42.9	630.9	650.9	30.2
21000.0	465.6	-11.6	-22.8	39.1	619.7	650.2	30.0
21500.0	455.4	-12.3	-24.2	36.1	609.0	649.5	29.7
22000.0	447.4	-13.3	-24.9	36.7	599.3	648.4	29.5
22500.0	439.5	-14.4	-25.7	37.3	589.9	646.9	29.7
23000.0	429.8	-15.4	-26.3	37.9	580.6	645.6	29.9
23500.0	421.2	-16.6	-26.8	49.0	571.0	644.2	29.6

STATION ALTITUDE 4051.37 FEET
26 MAY 81 1600 hrs, ND
ASCENSION NO. 104

UPPER AIR DATA
146016.004
LC-57

GEODETIC COORDINATES
32°40'17" LAT DEG
106°31'23" LON DEG

TABLE 7 CON'T

GEODETIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	DEWPOINT PERCENT	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SETTLE OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TH)	WIND SPEED KNOTS	INDEX OF REFRACTION
24000.0	412.8	-17.9	-23.3	62.1	562.8	622.7	285.3	25.5	1.000131
24500.0	404.5	-18.9	-21.0	64.0	593.8	621.4	282.9	23.0	1.000128
25000.0	396.3	-20.3	-24.9	66.5	545.6	619.7	282.7	19.9	1.000126
25500.0	388.2	-20.8	-27.3	55.7	535.9	619.1	282.8	18.9	1.000123
26000.0	380.3	-21.9	-29.2	56.7	527.1	617.7	282.9	18.6	1.000121
26500.0	372.5	-23.1	-29.0	58.4	518.8	616.2	281.6	19.9	1.000119
27000.0	364.9	-24.3	-28.9	59.4	510.5	614.7	280.1	21.7	1.000117
27500.0	357.5	-25.2	-31.8	54.1	501.9	613.5	277.0	22.3	1.000114
28000.0	349.0	-26.3	-33.4	50.9	493.7	612.2	275.3	22.4	1.000112
28500.0	342.6	-27.5	-34.9	49.2	485.8	610.7	273.9	23.4	1.000110
29000.0	335.5	-28.7	-36.2	48.2	477.9	609.2	272.9	24.6	1.000108
29500.0	328.3	-29.9	-37.2	48.6	470.1	607.7	273.9	25.5	1.000106
30000.0	321.4	-31.1	-38.2	49.0	462.4	606.2	275.5	26.2	1.000104
30500.0	314.6	-32.3	-39.3	49.5	454.9	604.7	279.4	25.8	1.000103
31000.0	307.9	-33.5	-40.3	49.9	447.5	603.2	274.1	26.1	1.000101
31500.0	301.3	-34.7	-41.7	48.4	440.1	601.7	279.9	25.8	1.000099

STATION ALTITUDE 4610' FT. E. T. S.
 26 MAY 1941 1000 hrs. P.D.T.
 ASCENSIO, NO. 104

ANALYTICAL LEVELS
 1460160104
 LC-37

GEODETIC COORDINATES
 32°40'17" LAT DEG
 106°31'23" LONG DEG

TABLE 8

PRESSURE MILLIBARS	GEOPOTENTIAL FLEET	TEMPERATURE DEGREES	AIR DEWPOINT CENTIGRADE	WELL HUM. PERCENT	WELL HUM. DEGREES (TN)	DIRECTION DEGREES (TN)	WIND DIA. SPEED KNOTS
850.0	4902.	24.5	3.2	25.	39.0	3.8	
800.0	628.	19.6	1.0	29.	15.0	0.5	
750.0	B433.	14.5	-1.7	35.	33.5.0	2.1	
700.0	10329.	9.6	-4.4	37.	281.0	10.6	
650.0	12325.	5.4	-6.4	48.	256.7	15.1	
600.0	14433.	-1.4	-8.1	60.	249.9	23.0	
550.0	16699.	-5.1	-19.0	28.	255.0	14.3	
500.0	19161.	-7.4	-19.5	37.	297.5	10.1	
450.0	21821.	-15.0	-24.7	37.	295.9	24.8	
400.0	24732.	-19.5	-24.4	65.	282.7	21.4	
350.0	27945.	-26.3	-33.4	51.	275.4	22.4	
300.0	31538.	-34.9	-42.0	48.			

STATION ALTITUDE 3989.00 FEET MSL
26 MAY 1951 1200 HRS MDT
ASUMPTION: NO. 559

SIGNIFICANT LEVEL DATA
14600, 0.359
WHITE SANDS

TABLE 9

SEASIDE COORDINATES
32°40'04.3 LAT DEG
106°37'03.3 LONG DEG

PRESSURE GEOMETRIC MILLIBARS	ALTITUDE METERS MSL FELL	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT
677.4	3789.0	29.5	16.0
850.0	4009.6	25.7	20.0
783.6	7049.5	19.7	24.0
700.0	10357.7	9.5	36.0
607.4	14160.1	-2	52.0
590.8	14333.2	-9	-12.5
564.2	16096.3	-1.7	-17.4
547.6	16566.9	-2.7	-14.1
500.0	19228.5	-7.1	-20.0
430.0	23030.4	-16.3	-25.7
400.0	24807.1	-20.5	-22.0
393.4	25211.3	-21.5	-24.0
345.4	28332.4	-27.5	-34.5
300.0	31614.8	-35.8	-43.0

STATEMENT OF THE POSITION OF THE UNITED STATES IN THE SITUATION ALREADY EXISTING.

TABLE 10

GEODETIC COORDINATES
32°40'43" LAT LEG
106°37'11" LONG LEG

GEOMETRIC PRESSURE	PRESSURE ATLANTIC MILITARY FLEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL.HUM. PERCENT	DENSITY GRAVICUBIC METER	SPEED OF SOUND KILOMETERS PER HOUR	WIND DATA	DIRECTION DEGREES (TN)		SPEED KILOMETERS PER HOUR	REFRACTION
							WIND DEGREES CENTIGRADE	WIND DEGREES CENTIGRADE		
3989.9	877.4	29.5	2.7	19.0	1006.7	678.8	60.0	5.1	1.000255	
4000.9	877.1	29.5	2.7	19.0	1006.5	678.8	60.1	5.1	1.000255	
4500.9	362.1	27.4	1.3	19.1	995.2	676.4	83.1	5.2	1.000251	
5000.9	847.3	25.4	1.0	20.2	985.6	674.2	86.1	5.3	1.000248	
5500.9	332.6	24.0	.5	21.1	973.2	672.0	86.9	5.4	1.000244	
6000.9	312.1	22.6	-.1	22.0	960.9	671.0	91.5	5.6	1.000240	
6500.9	802.0	21.2	-.7	23.0	946.7	669.3	91.6	4.8	1.000237	
7000.9	790.3	19.8	-.3	23.9	938.8	667.7	90.8	3.8	1.000233	
7500.9	775.9	18.3	-.7	25.6	925.0	666.0	83.8	3.1	1.000230	
8000.9	762.1	16.9	-2.1	27.4	913.3	664.2	85.3	2.4	1.000227	
8500.9	743.5	15.2	-2.5	29.3	901.0	662.4	71.7	2.2	1.000224	
9000.9	735.1	13.7	-3.1	31.1	890.5	660.6	53.9	2.6	1.000221	
9500.9	722.0	12.1	-3.7	32.9	879.4	658.8	41.4	3.1	1.000218	
10000.0	709.3	10.6	-4.3	34.7	868.5	657.5	20.8	3.6	1.000214	
10500.0	699.3	9.1	-4.9	36.6	857.3	655.3	9.9	4.0	1.000211	
11000.0	689.4	7.9	-5.3	38.7	845.3	653.8	340.7	4.8	1.000208	
11500.0	671.9	6.6	-5.8	40.8	833.5	652.3	305.0	7.2	1.000205	
12000.0	659.4	5.3	-6.3	42.9	821.9	650.8	287.9	11.0	1.000202	
12500.0	640.2	4.0	-6.8	45.0	810.4	649.3	279.3	14.8	1.000199	
13000.0	634.3	2.8	-7.4	47.1	793.2	647.8	273.7	17.0	1.000196	
13500.0	622.0	1.5	-8.0	48.2	780.1	646.3	269.5	19.2	1.000192	
14000.0	611.5	.2	-8.6	51.3	777.2	644.7	264.2	19.4	1.000189	
14500.0	599.6	-.5	-10.6	47.2	764.9	643.8	253.9	19.6	1.000185	
15000.0	580.3	-.9	-12.7	40.3	751.8	643.2	257.1	18.4	1.000179	
15500.0	571.2	-1.3	-14.7	35.2	738.7	642.8	257.0	16.4	1.000175	
16000.0	562.3	-1.6	-16.9	30.0	725.8	642.5	257.1	14.5	1.000170	
16500.0	553.5	-2.2	-15.5	35.3	713.5	641.6	253.2	12.8	1.000168	
17000.0	545.0	-2.9	-14.5	40.5	701.7	640.8	252.0	11.1	1.000167	
17500.0	534.6	-5.9	-15.8	38.9	690.7	639.7	267.2	11.0	1.000165	
18000.0	522.4	-4.3	-17.2	37.2	682.8	638.5	272.7	11.3	1.000160	
18500.0	514.3	-5.7	-14.6	35.5	669.9	637.4	261.0	12.0	1.000157	
19000.0	504.4	-6.7	-20.0	33.8	656.6	636.2	289.0	13.1	1.000155	
19500.0	494.6	-7.3	-21.9	33.8	648.7	634.9	295.0	13.8	1.000151	
20000.0	484.9	-9.0	-21.5	35.2	636.9	633.5	277.1	14.2	1.000148	
20500.0	475.4	-10.2	-22.1	36.7	629.3	632.0	295.0	16.8	1.000146	
21000.0	465.0	-11.4	-22.3	38.1	619.3	630.0	295.0	17.7	1.000143	
21500.0	455.9	-12.6	-23.5	39.6	610.4	629.1	291.2	20.5	1.000141	
22000.0	447.0	-13.8	-24.2	41.0	601.3	627.6	289.3	23.5	1.000139	
22500.0	439.1	-15.0	-24.9	42.5	592.2	626.1	287.1	25.5	1.000137	
23000.0	430.5	-16.2	-25.6	43.9	583.4	625.0	285.0	27.1	1.000135	

STATION ALTITUDE 3989.00 FEET MSL
26 MAY H1 1200 HRS MDT
ASCENSION NO. 359

WEATHER AIR DATA

146000054

WEATHER SIGHTS

WORLD COORDINATES
32°40.043 LAT DEG
106°37.033 LON DEG

TABLE 10 CONT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	REL.HUM. PERCENT	REFRACT. GM/CMIC	REFRACT. METER	REFRACT. KNOBS	WIND DIA DEGREES (10)	WIND DIA KNOTS	INDEX OF REFRACTION
23500.0	421.0	-17.4	-25.3	50.1	574.2	623.2	252.6	27.7	1.000132
24000.0	415.4	-18.6	-25.0	56.6	565.3	621.4	260.2	26.0	1.000131
24500.0	410.0	-19.8	-25.0	63.0	556.5	620.4	277.6	26.4	1.000129
25000.0	399.8	-21.0	-24.8	71.3	547.9	618.9	277.2	26.5	1.000127
25500.0	389.7	-22.1	-25.5	73.7	539.9	617.0	276.6	26.6	1.000125
26000.0	380.7	-23.0	-27.0	69.7	529.6	616.3	277.1	26.5	1.000122
26500.0	372.8	-24.1	-28.5	65.7	520.9	615.1	277.5	26.4	1.000120
27000.0	365.1	-24.9	-30.1	61.7	512.2	613.9	274.5	25.5	1.000117
27500.0	357.6	-25.9	-31.7	57.7	505.6	612.7	271.7	24.9	1.000115
28000.0	350.2	-26.9	-33.4	53.7	495.2	611.5	269.3	25.1	1.000113
28500.0	342.9	-27.9	-34.9	50.8	487.0	610.2	268.8	25.2	1.000110
29000.0	335.6	-29.2	-36.2	50.2	479.1	608.6	270.2	25.2	1.000108
29500.0	328.5	-30.5	-37.5	49.6	471.4	607.0	271.8	25.8	1.000107
30000.0	321.5	-31.7	-38.8	49.0	463.8	605.4	273.4	26.5	1.000105
30500.0	314.7	-33.0	-40.1	48.4	456.4	603.8			1.000103
31000.0	308.0	-34.2	-41.4	47.7	449.1	602.2			1.000101
31500.0	301.5	-35.5	-42.7	47.1	441.9	600.6			1.000099

STATION ALTITUDE 3480.00 FEET MSL
26 MAY 1200 HRS ADT
AIRCRAFT NO. 969

AT DENSITY LEVELS
14600.00 13500.
WHITE AIR

SATELLITE COORDINATES
32°40.043 LAT DEG
106.37033 LON DEG

TABLE 11

PRESSURE MILLIBARS	GEOPOTENTIAL HEIGHT	TEMPERATURE		REL. HUM. PERCENT	DIRECTION DEGREES (TN)	WIND DATA SPD. KNOTS
		DEGREES OF INCLINATION	DEGREES OF INCLINATION			
850.0	9700.	25.7	1.1	20.	050.	5.3
800.0	6038.	20.8	-9.	23.	91.4	4.5
750.0	8449.	15.4	-2.5	29.	73.7	2.2
700.0	10547.	2.5	-4.3	50.	15.9	5.9
650.0	12547.	4.4	-6.6	44.	281.3	1.7
600.0	14465.	-7.5	-10.3	47.	259.2	19.6
550.0	16741.	-2.6	-14.5	59.	260.5	11.9
500.0	19201.	-7.1	-29.3	33.	291.0	15.5
450.0	21865.	-13.5	-24.0	41.	289.7	22.8
400.0	24755.	-20.5	-25.0	67.	277.4	20.4
350.0	27967.	-26.9	-33.4	54.	269.3	25.1
300.0	31551.	-35.8	-43.0	47.		

STATION ALTITUDE 4051.37 FEET MSL
26 MAY 51 1300 HRS MDI
ASCENSION NO. 105

SIGNIFICANT LEVEL DATA
14601.0105
LC-37

GEODETIC COORDINATES
32°40'17" LAT DEG
106°31'23" LONG DEG

TABLE 12

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE M.S.L. FEET	TEMPERATURE AIR DEPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
874.5	4051.4	30.4	16.0
870.2	4195.2	28.0	3.0
850.0	4875.0	25.6	1.7
801.4	6557.8	20.6	-7
782.0	7249.3	18.2	-2.1
764.6	8617.7	14.4	-2.5
725.6	9332.5	12.6	-3.0
716.6	9676.0	11.7	-3.6
700.0	10317.9	9.8	-4.9
663.0	11787.8	5.1	-6.1
619.4	13597.0	0.0	-8.2
585.6	15072.9	-0.8	-15.8
577.2	15452.4	-0.5	-15.9
568.8	15837.0	-1.6	-16.5
542.8	17058.4	-3.1	-17.1
500.0	19175.8	-8.4	-21.4
469.8	20755.2	-12.0	-22.3
454.8	21569.0	-14.1	-20.9
446.4	22634.1	-14.8	-22.5
430.8	22917.1	-16.6	-25.7
415.4	23815.2	-18.0	-25.8
400.0	24740.3	-20.4	-25.6
393.6	25132.7	-21.5	-25.5
379.2	26034.6	-23.0	-26.8
344.8	28304.7	-28.3	-35.8
325.0	29691.0	-31.9	-37.7
300.0	31533.4	-37.1	-42.6

STATION ALTITUDE 4951.37 FEET MSL
26 MAY 81 13th HRS ND
ASCENSION NO. 105

UPPER AIR DATA
1460180105
L.C-37

TABLE 13

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	TEMPERATURE DEWPOINT CELSIUS	REL.HUM. PERCENT	INTENSITY GM/SEC	SPEED OF SOUND KNOTS	DIRECTION DEGREES	WIND DATA SPD KNOTS	INDEX OF REFRACTION.
4051.4	374.5	30.4	1.8	16.0	1070.6	679.8	120.0	1.9	1.000252
4500.0	861.1	26.9	2.4	20.4	966.5	675.9	142.5	1.4	1.000253
5000.0	846.3	25.2	1.5	21.2	955.1	674.0	164.0	1.3	1.000249
5500.0	831.6	23.7	0.9	22.1	972.9	672.3	216.4	1.7	1.000245
6000.0	817.2	22.3	0.2	23.0	960.9	670.5	229.5	2.6	1.000241
6500.0	802.9	20.8	-0.6	23.9	949.1	668.8	229.5	4.0	1.000237
7000.0	788.9	19.1	-1.6	24.6	938.1	666.8	230.8	5.5	1.000233
7500.0	775.1	17.5	-2.1	26.1	926.5	665.0	236.7	7.6	1.000230
8000.0	761.3	16.1	-2.2	28.3	914.4	663.4	240.9	9.7	1.000227
8500.0	747.7	14.7	-2.4	30.5	902.5	661.8	247.7	12.1	1.000224
9000.0	734.4	13.4	-3.1	31.5	890.4	660.3	251.5	12.9	1.000221
9500.0	721.2	12.2	-3.6	33.0	878.4	658.9	252.4	12.7	1.000217
10000.0	708.2	10.7	-4.3	34.5	866.9	657.2	244.1	11.6	1.000214
10500.0	695.3	9.2	-5.0	36.1	855.9	655.4	237.6	11.4	1.000211
11000.0	682.6	7.6	-5.4	39.2	845.0	653.5	233.7	11.8	1.000208
11500.0	670.1	6.0	-5.8	42.2	834.3	651.0	235.0	12.4	1.000205
12000.0	657.7	4.5	-6.3	45.2	823.4	649.9	237.9	13.2	1.000202
12500.0	645.5	3.1	-6.8	47.9	812.3	648.2	242.5	13.5	1.000199
13000.0	632.5	1.7	-7.4	50.7	801.3	646.5	250.7	13.3	1.000196
13500.0	621.7	.3	-8.0	53.5	790.4	644.6	259.1	13.3	1.000193
14000.0	610.0	-2.5	-9.9	47.7	777.2	644.2	263.0	12.2	1.000188
14500.0	598.5	-2.4	-12.4	39.9	763.5	643.6	267.1	10.9	1.000182
15000.0	587.2	-0.8	-15.3	32.1	750.1	641.4	263.5	9.5	1.000177
15500.0	576.2	-0.6	-16.0	30.1	735.7	640.5	254.7	8.1	1.000173
16000.0	565.3	-1.8	-16.5	31.3	724.9	642.1	251.3	8.0	1.000170
16500.0	554.5	-2.4	-16.8	32.1	712.7	641.4	252.8	8.7	1.000167
17000.0	544.1	-3.0	-17.0	32.9	700.8	640.6	255.9	9.6	1.000164
17500.0	533.6	-4.2	-18.0	33.2	690.4	639.2	259.9	10.8	1.000162
18000.0	522.3	-5.5	-19.0	33.4	680.4	637.7	264.0	11.7	1.000159
18500.0	512.3	-6.7	-20.0	33.7	670.5	636.2	271.7	11.7	1.000156
19000.0	502.4	-8.0	-21.0	33.9	660.8	634.7	279.4	11.8	1.000153
19500.0	492.6	-9.1	-21.5	35.6	650.0	635.5	282.2	13.3	1.000151
20000.0	484.9	-10.3	-21.8	36.2	640.9	631.9	263.5	15.0	1.000149
20500.0	474.6	-11.4	-22.1	40.7	631.1	630.5	283.3	17.5	1.000146
21000.0	465.2	-12.6	-21.8	46.2	621.6	629.1	281.0	21.2	1.000144
21500.0	456.1	-13.9	-21.0	54.8	612.3	627.5	280.4	24.8	1.000143
22000.0	447.9	-14.7	-23.4	47.7	602.2	620.5	279.7	26.0	1.000139
22500.0	438.1	-15.7	-24.7	45.9	592.5	625.2	278.9	28.0	1.000137
23000.0	429.4	-16.7	-25.7	45.5	582.9	624.0	275.6	29.9	1.000134
23500.0	420.7	-17.5	-25.8	48.2	573.0	625.1	272.6	30.8	1.000132

STATION ALTITUDE 4000 FT. SL
26 MAY 1961 1300 hrs 1D₁
ASCENSION NO. 105

UPPER AIR DATA
1460100105
LC-37

OUTPUT LOC COORDINATES
52.40175 LAT LEG
106.31232 LON DEG

TABLE 13 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	WIND DATA SPEED KNOTS	WIND DATA DIRECTION DEGREES (TH)	INPUT OF REFRACTION
24000.0	412.5	-18.5	52.6	563.6	621.9	270.8	30.3
24500.0	405.9	-19.8	52.6	555.0	620.3	269.2	29.9
25000.0	399.8	-21.1	52.4	546.6	618.7	269.6	30.2
25500.0	387.7	-22.1	52.9	537.6	617.5	269.9	30.5
26000.0	379.7	-22.9	52.7	528.4	616.4	270.0	31.2
26500.0	371.9	-24.1	52.2	519.4	615.0	270.2	31.7
27000.0	364.2	-25.3	52.7	511.5	613.5	270.4	31.7
27500.0	356.6	-26.4	51.3	503.3	612.1	270.7	31.7
28000.0	349.2	-27.6	52.8	495.2	610.6	271.4	31.8
28500.0	341.9	-29.0	54.3	487.3	609.1	272.0	31.5
29000.0	334.7	-30.1	55.7	479.6	607.4	272.1	29.3
29500.0	327.7	-31.4	57.2	472.0	605.8	272.9	27.6
30000.0	320.7	-32.8	59.5	464.6	604.1	271.3	27.6
30500.0	313.8	-34.2	59.9	457.3	592.5		
31000.0	307.0	-35.6	41.2	450.2	600.5		
31500.0	300.4	-37.0	42.0	443.1	598.7		

STATION ALTITUDE 4753.37 FEET, SL
26 MAY 81
ASSEMBLATION NO. 105

MANUFACTORY LEVELS
1460100105
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 14

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES	DEWPOINT CENTIGRADE	KELVIN. PERCENT	WIND DATA DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS
850.0	4871.	25.6	1.7	21.	172.9	1.2
800.0	6602.	20.4	-8	24.	229.6	4.3
750.0	8410.	15.0	-2.4	30.	246.7	11.7
700.0	10308.	9.8	-4.9	35.	239.0	11.3
650.0	12305.	3.6	-6.6	47.	239.0	13.7
600.0	14417.	-5	-12.1	41.	266.4	11.1
550.0	16693.	-2.7	-16.9	32.	253.4	8.9
500.0	19149.	-8.4	-21.4	34.	281.1	12.1
450.0	21800.	-14.5	-22.4	51.	279.9	26.2
400.0	24679.	-20.4	-25.6	63.	269.4	30.1
350.0	27899.	-27.5	-32.7	61.	271.3	31.8
300.0	31470.	-37.1	-42.6	56.		

STATION ALTITUDE 3989.00 FEET MSL
26 MAY 81 1511 HRS MDT
ASCENSION NO. 361

SIGHTING LEVEL DATA
14600±0.360
WHITE SMOKE

GEODETIC COORDINATES
32°40'04.5" LAT UEG
106°37'03.5" LON UEG

TABLE 15

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE OF POINT OF GREFS CENTIGRADE	REL. HUM. PERCENT
875.0	3089.0	32.2	16.0
850.0	4038.5	28.4	27.0
770.4	7659.8	10.4	51.0
700.0	10328.9	11.4	-2.8
635.8	12034.1	3.6	-5.8
605.3	14237.6	-3.3	-7.1
568.0	15001.3	-3.6	-16.1
543.6	17044.3	-2.7	-15.0
500.0	19203.2	-8.0	-19.6
435.4	22684.7	-16.3	-24.7
420.6	23538.2	-19.2	-20.8
400.0	24768.8	-20.0	-24.7
398.0	25110.4	-21.4	-25.4
378.2	26130.4	-22.4	-20.4
360.0	31578.3	-36.2	-44.2

SITUATION ALTITUDE 3480.00 FEET S.L.
26 MAY 81 151 HRS MDT
ASCENSION NO. 360

WHITE SANDS
NEW MEXICO

GEODETIC COORDINATES
32°40'04.3 LAT DEG
106.37033 LON DEG

TABLE 16

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	REL. HUM. PERCENT	WIND DATA SPEED DEGREES (TR)	INDEX OF REFRACTION
3989.0	874.0	12.2	16.0	994.9 081.9	300.0 9.9
4000.0	874.7	12.2	16.1	994.7 081.8	299.8 9.9
4500.0	859.9	29.9	22.6	984.3 079.6	293.1 10.4
5000.0	845.2	27.9	27.2	975.0 077.5	287.0 11.0
5500.0	830.6	26.3	6.3	962.1 075.0	281.6 11.6
6000.0	816.3	24.7	5.3	950.8 073.7	276.8 12.4
6500.0	804.2	23.1	4.5	939.6 071.9	272.7 13.3
7000.0	786.3	21.5	3.2	928.6 070.0	268.3 13.6
7500.0	774.7	19.9	2.2	917.7 066.1	264.1 13.8
8000.0	761.0	18.4	1.3	906.4 066.3	260.7 14.0
8500.0	747.5	16.9	.5	895.0 064.5	259.1 13.8
9000.0	734.2	15.4	-4	883.7 062.8	257.4 13.7
9500.0	721.1	13.9	-1.2	872.7 061.0	255.8 13.6
10000.0	706.3	12.4	-2.1	861.8 060.2	255.0 13.4
10500.0	695.6	10.9	-2.9	850.8 057.5	254.9 13.2
11000.0	682.9	9.4	-3.4	839.7 055.7	254.9 12.9
11500.0	670.4	7.9	-3.9	828.8 053.9	254.6 12.7
12000.0	659.1	6.4	-4.6	816.1 052.2	254.0 13.0
12500.0	646.1	4.9	-5.2	807.5 050.4	253.2 13.2
13000.0	634.2	3.4	-5.9	797.0 048.6	252.4 13.5
13500.0	622.4	1.9	-6.3	786.4 046.9	251.0 13.8
14000.0	610.7	*4	-6.8	776.0 045.1	249.4 14.1
14500.0	599.3	*8	-7.4	765.0 043.0	249.1 13.5
15000.0	587.9	*8	-11.0	49.5 753.5	252.1 12.5
15500.0	576.8	-2.8	-13.7	42.5 742.2	251.1 11.7
16000.0	565.8	-5.5	-16.0	37.1 730.2	250.1 11.3
16500.0	555.1	-3.1	-15.5	37.5 715.3	249.9 11.9
17000.0	544.5	-2.7	-15.1	38.0 700.6	249.0 12.5
17500.0	534.1	-3.8	-16.0	38.0 690.0	248.3 12.5
18000.0	522.8	-5.0	-17.1	38.0 679.9	247.7 13.1
18500.0	513.8	-6.3	-18.3	38.0 670.0	246.8 13.7
19000.0	503.9	-7.5	-17.3	38.0 660.0	246.0 14.5
19500.0	494.1	-6.7	-15.1	38.0 650.2	245.3 14.5
20000.0	484.4	-9.9	-20.2	38.0 640.5	244.7 14.5
20500.0	474.9	-11.1	-21.1	40.3 632.4	243.0 14.5
21000.0	465.5	-12.3	-22.2	41.7 630.7	240.9 14.5
21500.0	456.4	-13.5	-22.9	44.6 621.2	239.5 14.5
22000.0	447.4	-14.7	-23.7	46.0 611.3	238.2 14.2
22500.0	438.6	-12.9	-21.4	47.5 602.5	236.2 13.9
23000.0	429.9	-17.0	-22.9	47.5 593.4	234.0 13.7

STATION ALTITUDE 3,990 FEET ASL
26 MAY 61
ASCENSIOIN 100.000

OPENER AIR LA
14600.03600
WILF SAWYER

GLORIFIC COORDINATES
32°40'04.3 LAT LG
106°37'33 LONG LG

GEOMETRIC PRESSURE
ALTITUDE
IN SL FEET
ASCENSIOIN 100.

TEMPERATURE
AIR
DEGREES CELSIUS
ASCENSIOIN 100.

REL.HUM.
PERCENT
ASCENSIOIN
CENTIGRADO
MILLIAP'S

GEOMETRIC PRESSURE	TEMPERATURE	REL.HUM.	DENSITY G/M CUBIC METER	WIND JAH KNOTS	WIND JAH KNOTS (TH)	WIND JAH KNOTS	WIND JAH KNOTS	INFLUX OF REFRACTIG
23500.0	421.3	-16.1	574.8	622.2	277.5	26.2	1.000135	
24000.0	412.7	-16.9	564.9	621.5	273.4	26.7	1.000132	
24500.0	404.4	-19.6	555.2	620.6	263.5	27.2	1.000129	
25000.0	396.2	-20.4	545.8	619.5	263.5	27.0	1.000126	
25500.0	388.0	-21.4	536.7	618.4	264.0	26.3	1.000124	
26000.0	380.2	-22.2	527.5	617.4	265.5	26.8	1.000121	
26500.0	372.3	-23.3	518.9	615.9	268.3	29.4	1.000119	
27000.0	364.5	-24.6	510.6	614.5	269.1	29.1	1.000117	
27500.0	356.8	-25.9	502.4	612.7	269.3	28.4	1.000114	
28000.0	349.3	-27.1	52.9	611.2	269.1	27.2	1.000112	
28500.0	342.0	-28.4	51.5	610.6	268.9	26.3	1.000110	
29000.0	334.8	-29.7	50.1	608.8	268.5	25.9	1.000108	
29500.0	327.7	-30.9	48.7	607.2	263.0	27.0	1.000106	
30000.0	320.6	-32.2	47.3	604.8	267.0	27.9	1.000105	
30500.0	314.1	-33.5	46.0	603.2	265.3	28.5	1.000103	
31000.0	307.5	-34.7	44.6	449.2	601.6	1.000101		
31500.0	301.7	-36.0	43.2	442.1	600.0	1.000099		

TABLE 16 CONT

STATION ALTITUDE 3939.60 FEET S.L.
26 MAY 61 1511 HRS, MDT
ASCENSION NO. 366

STATIONARY LEVELS
1460020300
WHTT SWL

ULOGIC COORDINATES
32.40043 LAT NEG
106.37033 LON UEG

TABLE 17

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE			REL.HUM. PERCENT	WIND DIRECTION DEGREES (TN)	WIND VELOCITY KNOTS
		ATP DEGREES	DEPOT CENTIGRAD.	REL.HUM. PERCENT			
850.0	4835.	28.4	7.6	27.	289.0	10.7	
800.0	5505.	22.9	6.1	29.	272.0	12.4	
750.0	6407.	17.2	6	33.	259.4	13.9	
700.0	10519.	11.4	-2.6	37.	255.0	13.3	
650.0	12329.	5.4	-5.0	47.	253.4	13.2	
600.0	14452.	-5.8	-8.2	57.	250.0	13.6	
550.0	16717.	-2.9	-15.3	58.	254.4	12.2	
500.0	19176.	-3.0	-19.8	58.	269.2	15.5	
450.0	21631.	-14.3	-23.5	46.	275.4	24.8	
400.0	24727.	-20.0	-24.7	66.	265.6	27.6	
350.0	27936.	-27.0	-33.7	53.	269.1	27.2	
300.0	31515.	-36.2	-44.2	43.			

